

Claims

1. A gas generating composition comprising the following components (a) and (b) :

(a) a polyoxymethylene polymer or a polyoxymethylene copolymer as fuel and  
(b) a nitrogen-free oxidizing agent.

2. The gas generating composition as claimed in Claim 1, which further comprises at least one selected from the group consisting of the following components (c) and (d) :

(c) a nitrogen-free binder and  
(d) an additive selected from the group consisting of a metal oxide, a metal hydroxide and a metal carbonate.

3. The gas generating composition as claimed in Claim 1, wherein the content of the component (a) is 5 to 35 mass %, and the content of the component (b) is 95 to 65 mass %.

4. The gas generating composition as claimed in Claim 2, wherein the content of the component (a) is 5 to 35 mass %, the content of the component (b) is 95 to 65 mass %, the content of the component (c) is 0 to 15 mass % and the content of the component (d) is 20 mass % or less.

5. The gas generating composition as claimed in any one of Claims 1 to 4, wherein the fuel as component (a) is paraformaldehyde or polyacetal resin.

6. The gas generating composition as claimed in any one of Claims 1 to 5, wherein the oxidizing agent as component (b) is copper oxide.

7. The gas generating composition as claimed in any one of Claims 2 to 6, wherein the binder as component (c) is at least one selected from the group consisting of carboxymethylcellulose, sodium carboxymethylcellulose, potassium carboxymethylcellulose, cellulose acetate, cellulose acetate butyrate, methyl cellulose, ethyl cellulose, hydroxyethyl cellulose, ethylhydroxyethyl cellulose, hydroxypropyl cellulose, carboxymethylethyl cellulose, fine crystalline cellulose, polyvinyl alcohol, acrylic rubber, guar gum, starch and silicone.

8. The gas generating composition as claimed in any one of Claims 2 to 7, wherein the binder as component (d) is at least one selected from the group consisting of metal oxides including cupric oxide, iron oxide, zinc oxide, cobalt oxide, manganese oxide, molybdenum oxide, nickel oxide, bismuth oxide, silica or alumina, metal hydroxides including aluminum hydroxide, cobalt hydroxide or iron hydroxide, metal carbonates or basic metal carbonates including cobalt carbonate, calcium carbonate, a basic zinc carbonate or a basic copper carbonate, composite compounds of metal oxides or metal hydroxides including Japanese acid clay, kaolin, talc, bentonite, diatomaceous earth or hydrotalcite, metal acid salts including sodium silicate, mica molybdate, cobalt molybdate or ammonium molybdate, silicone, molybdenum disulfide, calcium stearate, silicon nitride and silicon carbide.

9. The gas generating composition as claimed in Claim 1, which comprises (a) paraformaldehyde or polyacetal resin and

(b) copper oxide.

10. The gas generating composition as claimed in Claim 1, which comprises 5 to 35 mass % of (a) paraformaldehyde and 95 to 65 mass % of (b) copper oxide.

11. The gas generating composition as claimed in Claim 1, which comprises 5 to 35 mass % of (a) polyacetal resin and 95 to 65 mass % of (b) copper oxide.

12. The gas generating composition as claimed in Claim 2, which comprises (a) paraformaldehyde or polyacetal resin, (b) copper oxide and (c) sodium carboxymethylcellulose or guar gum.

13. The gas generating composition as claimed in Claim 2, which comprises 15 to 25 mass % of (a) paraformaldehyde, 65 to 90 mass % of (b) copper oxide and 0.1 to 10 mass % of (c) sodium carboxymethylcellulose or guar gum.

14. The gas generating composition as claimed in Claim 2, which comprises 15 to 25 mass % of (a) polyacetal resin, 65 to 90 mass % of (b) copper oxide and 0.1 to 10 mass % of (c) sodium carboxymethylcellulose or guar gum.

15. The gas generating composition as claimed in Claim 2, which comprises 10 to 25 mass % of (a) paraformaldehyde, 65 to 90 mass % of (b) copper oxide, 0.1 to 10 mass % of (c) sodium carboxymethylcellulose and 1 to 15 mass % of (d) aluminum hydroxide or 1 to 10 mass % of (d) cobalt oxide.

16. The gas generating composition as claimed in Claim 2, which comprises 10 to 25 mass % of (a) polyacetal resin, 65 to 90 mass % of (b) copper oxide, 0.1 to 10 mass % of (c) sodium

carboxymethylcellulose and 1 to 15 mass % of (d) aluminum hydroxide or 1 to 10 mass % of (d) cobalt oxide.

17. A molded article of the gas generating composition being in the form of a single perforated cylinder or a perforated cylinder, obtained by extrusion-molding the gas generating composition as claimed in any one of Claims 1 to 16.

18. A molded article of the gas generating composition being in the form of pellets, obtained by compression-molding the gas generating composition as claimed in any one of Claims 1 to 16.

19. An inflator for air bag, using the gas generating composition as claimed in any one of Claims 1 to 16 or the molded article of the gas generating composition as claimed in Claim 17 or 18.